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- (74) Agents: CALDWELL, John, W. et al.; Woodcock Washburn LLP, One Liberty Place - 46th Floor, Philadelphia, PA 19103 (US).
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- (71) Applicant (*for all designated States except US*): **ISIS PHARMACEUTICALS, INC.** [US/US]; 2292 Paraday Avenue, Carlsbad, CA 92008 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BAKER, Brenda, F.** [US/US]; 2147 Avenida Toronja, Carlsbad, CA 92009 (US). **ELDRUP, Anne, B.** [DK/US]; 1190 Encinitas Boulevard, # 252, Encinitas, CA 92024 (US). **MANOHARAN, Muthiah** [US/US]; 25 Circle Drive, Weston, MA 02493 (US). **BHAT, Balkrishen** [IN/US]; 911 Rosemary Avenue, Carlsbad, CA 92009 (US). **GRIFFEY, Richard** [US/US]; 360 Barsby Street, Vista, CA 92084 (US). **SWAYZE, Eric, E.** [US/US]; 7789 Palenque Street, Carlsbad, CA 92009 (US). **CROOKE, Stanley, T.** [US/US]; 3211 Piragua Street, Carlsbad, CA 92009 (US).
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(54) Title: MODIFIED OLIGONUCLEOTIDES FOR USE IN RNA INTERFERENCE

(57) Abstract: The present invention provides modified oligonucleotides for use in the RNA interference pathway of gene modulation. The modified oligonucleotides are also provided having a 3' terminal cap group.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35063

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12P 19/34; A01N 43/04; C07H 21/00, 21/02, 21/04

US CL : 435/91.31; 514/44, 536/23.1, 24.1, 24.5, 25.3

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/91.31; 514/44, 536/23.1, 24.1, 24.5, 25.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	US 2003/0143732 A1 (FOSNAUGH et al.) 31 July 2003 (31.7.2003) pgs. 3-11, 19-23 in particular)	1-40
P, X	CZAUDERNA et al. Structural variations and stabilising modifications of synthetic siRNAs in mammalian cells. Nucleic Acids Research. June 2003. Vol. 31., pp. 2705-2716 (entire document)	1-17, 32, 35 ----- 18-31, 38-40
Y	PADDISON et al. Stable suppression of gene expression by RNAi in mammalian cells. Proc. Natl. Acad. Sci. February 2002. Vol. 99. pp. 1443-1448 (entire document)	1-40
Y	SUI et al. A DNA vector -based RNAi technology to suppress gene expression in mammalian cells. Proc. Natl. Acad. Sci. April 2002 Vol. 99: pp. 5515-5520 (entire document)	1-17, 26-30, 32, 35, 38
Y	ELBASHIR et al. Duplexes of 21-nucleotide RNAs mediate RNA interference in cultured mammalian cells. Nature May 2001. Vol. 411. pp. 494-498 (entire document)	1-17, 26-30, 32, 34-45, 37-38, 40
Y	CAPLEN et al. Specific inhibition of gene expression by small double-stranded RNAs in invertebrate and vertebrate systems. Proc. Natl. Acad. Sci. August 2001. Vol. 98. pp. 9742-47 (entire document).	1-25, 32-33, 35-36, 38-39

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Jon B. Ashen

Telephone No. 703-308-1235

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	YU et al. RNA interference by expression of short-interfering RNAs and hairpin RNAs in mammalian cells. Proc. Natl. Acad. Sci. April 2002. Vol. 99 pp. 6047-6052 (entire document).	1-40
Y	BEIGELMAN et al. Chemical modification of hammerhead ribozymes. Catalytic activity and nuclease resistance. J. Biol. Chem. October 1995. Vol. 43. pp. (entire document)	1-40

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

STN/CAS

Search terms: RNAi, siRNA, shRNA, RNaseIII, DICER, RNA-induced silencing complex, RISC, 3'-terminal cap, 3'-3' linkage, antisense oligomer/oligonucleotide, ribozyme, abasic nucleoside, abasic nucleotide